

REMARKS

Claims 1-3, 6-15, 17 and 21 are all of the pending claims, with claims 1 and 21 being written in independent form. By virtue of this Amendment, Applicants cancel claims 4, 5, 16 and 18-20, without prejudice or disclaimer, and add new claim 21.

The Examiner rejects claims 1-6 and 16 under 35 USC §103(a) as being obvious over US 3,522,515 to R. H. Harner (“Harner”) in view of JP 10-170615 to Motosuke (“Motosuke”), US 3,289,078 to A. G. Ratz (“Ratz”) and US 6,028,426 to Cameron et al. (“Cameron”). Applicants respectfully traverse this rejection in view of the following remarks.

I. Independent Claim 1:

Independent claim 1 defines a method that involves (among other things) measuring the voltage drop across a shunt resistance that is formed by a section of the conductor in which “the electrical resistance is increased locally by reducing the cross-section of the conductor,” and supplying a reference voltage to the analog/digital converter to compensate for a temperature dependence of the shunt resistance, “a temperature course of the analog/digital converter at least approximately corresponding to a temperature course of the shunt resistance.” Example, non-limiting embodiments of these features are discussed throughout the instant specification. For example, the “reduced cross-section” feature is discussed in paragraph [0008] and the “temperature course” feature is discussed at paragraph [0015]. At least these features (as recited in independent claim 1), in combination with the other features recited in independent claim 1, are not taught or suggested by the prior art relied upon by the Examiner.

Applicants respectfully submit that none of the asserted references teaches or suggests forming the shunt resistance by a section of the conductor in which the electrical resistance is increased locally by reducing the cross-section of the conductor. For example, and with reference to Fig. 2 of the primary reference to Harner, the disclosed shunt 20 includes two coaxially arranged tubular conductors 21, 23, which are closed off by end caps 29, 30.¹ The shunt 20 functions as a housing, as well as an antenna for a radio transmitter arranged on the

¹ Harner, column 3, lines 35-44.

inside of the tubular conductors 21, 23.² Also consider the secondary reference to Cameron. With reference to Fig. 2, the device measuring the intensity of a current flowing in the conductor includes an additional measuring element 12, which is fixed on the contacting surface of a circuit board 31. The additional measuring element 12 is provided with a thermistor 50 and is connected to several transistors.³

Turning to the next point, the Examiner looks to the secondary reference of Cameron to allegedly teach a “compensation” feature like the one defined by claim 1. However, Cameron is not pertinent to supplying a reference voltage to an analog/digital converter, for which the temperature course at least approximately matches the temperature course of the shunt resistance. In contrast, Cameron teaches that the current measuring signal, which is generated in an amplifier from the measure voltage drop, is reduced to match the shunt temperature detected at the thermistor. Based on the negative temperature coefficient, the resistor of the thermistor displays a temperature behavior that complements the resistance of the measuring shunt, meaning it displays opposite behavior.⁴ Certainly then, Cameron’s temperature compensating technique is fundamentally different than the one defined by claim 1.

II. Independent Claim 21:

Independent claim 21 is somewhat similar to claim 1 to the extent that claim 21 also recites (among other things) a “reduced cross-section” feature. Accordingly, claim 21 is believed to be patentable for reasons analogous to some of those noted above with respect to claim 1.

² Harner, column 3, lines 45+.

³ Cameron, column 2, lines 35+.

⁴ See Cameron, column 3, lines 15-51.

CONCLUSION

In view of the above, Applicants respectfully request reconsideration and allowance of all of the pending claims.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By



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